raised in that Office Action. It is respectfully submitted that this complete response places the application in condition for immediate allowance. Accordingly, Applicant solicits a prompt favorable reconsideration of this matter.

Claims 16-50 are active in this application. Claims 16, 27 and 38 have been amended, to more clearly distinguish the claimed subject matter over the combinations of patents applied in the art rejections. Claims 16, 27 and 38 have been amended to include a limitation relating to the nature of the header. As now claimed, the header comprises a header-symbol-sequence signal that is spread-spectrum processed with a chip-sequence signal. It is submitted that the original application disclosure provides a corresponding written description, for example, in lines 9-21 of page 7 of the specification. Each of the independent claims also has been amended to indicate that the data (before demultiplexing) is intended for a receiver, and that the packet-spread-spectrum signal (i.e. the signal actually transmitted) is intended for the receiver. Support for these further amendments appears, for example, in the abstract.

The issues raised in the latest Action all related to allegations of obviousness over various patent documents. A summary of the rejections is set forth below, after which, is provided a detailed commentary explaining the patentability of the amended claims.

Summary of Latest Art Rejections

In the latest Action, claims 16, 20-22, 25-27, 31, 33, 36-38, 42, 43 and 46-50 were rejected under 35 U.S.C. § 103 as unpatentable over U.S. patent No. 5,166,951 to Schilling (hereinafter the '951 patent) in combination with U.S. patent No. 5,291,486 to Koyanagi (hereinafter the '486 patent). In the '951 patent, data at a transmitter is demultiplexed into sub-data-sequence signals. Each sub-data-sequence signal is spread-spectrum processed into a spread-spectrum signal. The spread-spectrum signals are combined with each other and with a generic-chip-code signal and sent

over a common communications channel. The Examiner clearly recognizes that the communication system disclosed in the '951 patent does not include a device or means for adding a header, as claimed. Instead, the Examiner points to the data multiplexing technique for use in a digital information storage system, disclosed in the '486 patent, and concludes that addition of a header would have been obvious from the use of a header in that storage system.

Claims 17-19, 28-30 and 39-41 stand rejected as unpatentable over Schilling '951 in view of Koyanagi '486, in combination with U.S. patent No. 5,260,967 to Schilling (hereinafter the '967 patent) and U.S. patent No. 5,619,526 to Kim (hereinafter the '256 patent). The Examiner cited the Schilling '967 patent and the Kim '256 patent in support of his assertion that it would be obvious to add means for encoding, scrambling or encrypting to the basic combination of Schilling '951 and Koyanagi '486.

Claims 24, 25, 34, 35, 44 and 45 stand rejected as unpatentable over Schilling '951 and Koyanagi '486, further in combination with the Schilling '967 patent. Here, the Examiner takes official notice that a header contactenated with channels is well known, as allegedly disclosed by the Koyanagi '486 (citing Fig. 2). The Examiner cited the Schilling '967 patent for an alleged teaching of concatenation of a plurality of spread spectrum channels with a header field for sync information (citing Figs. 8 and 10).

Patentability of Pending Claims

The art rejections are respectfully traversed, particularly to the extent if any that they might be maintained with regard to the claims as they stand after entry of the above amendments. Although the scope varies somewhat, each of the independent claims (16, 27, and 38) requires individual spread-spectrum processing of the sub-data sequence channels with chip sequence signals and combining the resulting spread-spectrum channels into a multichannel spread-spectrum

signal. A header-symbol-sequence signal is spread-spectrum processed with a chip-sequence signal, and the result is the header that has been concatenated with the multi-channel spread spectrum signal. It is respectfully submitted that none of the combinations of references proposed in the art rejections fairly suggests such processing to form a packet-spread-spectrum signal for transmission over a communications channel.

The previous independent claims were all rejected over Schilling '951 in view of Koyanagi '486. As noted above, the technique disclosed by the Schilling '951 patent does not utilize a header. Although the data multiplexing technique for digital information storage disclosed the '486 patent uses a header adding circuit 3, that secondary document does not provide any teaching of spread-spectrum processing a header-symbol-sequence signal with a chip-sequence signal. It is believed that the combination of Schilling '951 in view of Koyanagi '486 would not produce a concatenated header, where the header comprises a header-symbol-sequence signal that has been spread-spectrum processed with a chip-sequence signal, as now claimed.

The '486 pack header contains information (e.g. time stamp) regarding the time of storing of the data stored in the pack. With such a technique, one pack header may be different from another pack header, as the data may have been stored at different times and thus associated with different time stamp information. As time of storage varies, the packet header is required to vary. The user of the '486 system reads the storing time information from the pack header and retrieves the pack data accordingly.

As claimed, the concatenated header is a header-symbol-sequence signal that has been spread-spectrum processed with a chip-sequence signal. Although the header-symbol-sequence signal may be used for synchronization at the receiver, as disclosed herein, it does not necessarily contain timing information as in the Koyanagi '486 patent. In the technique disclosed in this application, the header may be the same (if the symbol and chip sequence do not change), or the

header may vary. Based on the arrival time of the header (not any information contained in the header), the user device derives timing information of the packet data. The system does not necessitate that the header varies from packet to packet. The claims require that the header comprise a header-symbol-sequence signal spread-spectrum processed with a chip-sequence signal. Neither patent applied against the independent claims teaches such processing to construct a header or the addition of such a processed header to the combined multichannel-spread-spectrum signal.

It is submitted that the proposed combination of Schilling '951 with the header from the Koyanagi '486 patent would result in adding a header containing a time stamp to the group of spread-spectrum-processed signals. It is not clear from the documents or the Examiner's explanation how such a time stamp header ('486) would be incorporated into the spread-spectrum signals produced by the '951 system. It is believed that it would not have been obvious from the lack of explicit teachings on point to use a header comprising a header-symbol-sequence signal spread-spectrum processed with a chip-sequence signal, as clearly claimed.

Since the combination does not fairly suggest all of the claim limitations, independent claims 16, 27, and 38 all patentably distinguish over the applied combination of Schilling '951 and Koyanagi '486.

It is further submitted that the proposed additions selected from the Kim '256 patent and the Schilling '967 patent to address certain limitations recited in various dependent claims would not make up for the noted deficiencies in the basic combination of Schilling '951 and Koyanagi '486. For example, the addition of encoding, scrambling or encrypting, as in the rejection of claims 17-19, 28-30 and 39-41, would still not result in a method or an apparatus that produced the claimed spread-spectrum processed header symbol concatenated with the group of spread-spectrum-processed signals.

With respect to claims 24, 25, 34, 35, 44 and 45, Figs. 8 and 10 of the Schilling '967 patent were cited as a secondary teaching of adding a synchronization signal to a data packet before spread-spectrum processing. However, in the '967 patent the data are privacy coded, and the coded data with the synchronization information are spread-spectrum processed with a common chip sequence. It is respectfully submitted that such a teaching in the '967 patent actually leads away from the claimed processing in which the demultiplexed data are spread-spectrum-processed with a plurality of chip-sequence signals, and a header added, where the header comprises a header-symbol-sequence signal spread-spectrum processed with a chip-sequence signal.

Furthermore, the independent claims now require that the input data (before demultiplexing) is intended for a receiver, and that the packet-spread-spectrum signal (i.e. the signal actually transmitted) is intended for the receiver. This is intended to differentiate multiple access multiplexing situations in which communicated data relates to comminations of different user devices, such as that of the '967 patent. The synchronization provided by the Schilling '967 patent relates to a time division technique for communicating different data to or from different remote mobile units. There is no intent for any given unit to receive and process all the data units that follow the synchronization signal. As such there is no teaching to construct a packet-spread-spectrum signal intended for the receiver, with an associated header, in the manner positively recited in the claims. It is submitted that a teaching of synchronization applicable to a time division communication to/from mobile units (plural) simply would not have fairly suggested to an artisan to provide a similar synchronization signal (or a header symbol) in the context of a single receiver transmission as claimed.

As shown by the discussion above, none of the proposed combinations satisfies all of the limitations of any of the independent claims. Since the combinations do not satisfy the independent claims, the combinations similarly fail to meet the dependent claim limitations. The obviousness

rejections therefore should be withdrawn because all of the pending claims specify subject matter that is patentable over the applied art.

Conclusions

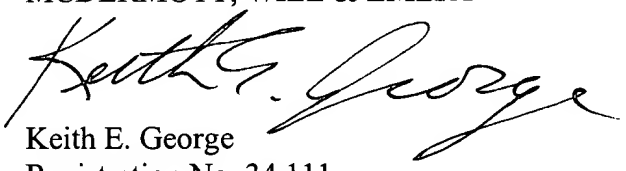
For the reasons explained above, claims 16-50 patentably distinguish over the applied art. The rejections therefore should be withdrawn, and all pending claims should be in condition for allowance. Prompt favorable reconsideration is solicited.

It is believed that this response addresses and overcomes all issues raised in the most recent Office Action. However, if any further issue should arise, which may be disposed of in a telephone interview or by way of an Examiner's amendment, the Examiner is requested to telephone Applicant's representative at the number shown below.

To the extent necessary, if any, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

MCDERMOTT, WILL & EMERY



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

Claims 16, 27 and 38 were amended as follows, wherein deletions are bracketed and additions are underlined:

16. (Amended) A method, using a packet transmitter, comprising the steps of:

storing [data from data] input data intended for a receiver, as stored data;

demultiplexing the stored data into a plurality of sub-data-sequence channels;

spread-spectrum processing the plurality of sub-data-sequence signals by a plurality of chip-sequence signals, respectively, thereby generating a plurality of spread-spectrum channels, with each of the plurality of chip-sequence signals different from other chip-sequence signals in the plurality of chip-sequence signals;

combining the plurality of spread-spectrum channels as a multichannel-spread-spectrum signal;

concatenating a header to the multichannel-spread-spectrum signal, thereby generating a packet-spread-spectrum signal intended for the receiver, the header comprising a header-symbol-sequence signal spread-spectrum processed with a chip-sequence signal; and

transmitting on a carrier frequency using radio waves, the packet-spread-spectrum signal over a communications channel.

27. (Amended) A packet transmitter comprising:

transmitter-memory means for storing [data from a data] input data intended for a receiver, as stored data;

demultiplexer means, coupled to said transmitter memory means, for demultiplexing the stored data into a plurality of sub-data-sequence channels;

spread-spectrum means, coupled to said demultiplexer means, for spread-spectrum processing the plurality of sub-data-sequence signals by a plurality of chip-sequence signals, respectively, thereby generating a plurality of spread-spectrum channels, with each of the plurality of chip-sequence signals different from other chip-sequence signals in the plurality of chip-sequence signals;

combiner means, coupled to said spread-spectrum means, for combining the plurality of spread-spectrum channels as a multichannel-spread-spectrum signal;

header means, coupled to said combiner means, for concatenating a header to the multichannel-spread-spectrum signal, thereby generating a packet-spread-spectrum signal intended for the receiver, the header comprising a header-symbol-sequence signal spread-spectrum processed with a chip-sequence signal; and

transmitter means, coupled to said header means, for transmitting on a carrier frequency using radio waves, the packet-spread-spectrum signal over a communications channel.

38. (Amended) A packet transmitter comprising:

a transmitter memory for storing [data from a data] input data intended for a receiver, as stored data;

a demultiplexer, coupled to said transmitter memory, for demultiplexing the stored data into a plurality of sub-data-sequence channels;

spread-spectrum means, coupled to said demultiplexer, for spread-spectrum processing the plurality of sub-data-sequence signals by a plurality of chip-sequence signals, respectively, thereby generating a plurality of spread-spectrum channels, with each of the plurality of chip-sequence signals different from other chip-sequence signals in the plurality of chip-sequence signals;

a combiner, coupled to said spread-spectrum means, for combining the plurality of spread-spectrum channels as a multichannel-spread-spectrum signal;

a header device, coupled to said combiner, for concatenating a header to the multichannel-spread-spectrum signal, thereby generating a packet-spread-spectrum signal intended for the receiver, the header comprising a header-symbol-sequence signal spread-spectrum processed with a chip-sequence signal; and

a transmitter subsystem, coupled to said header device, for transmitting on a carrier frequency using radio waves, the packet-spread-spectrum signal over a communications channel.